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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,913	02/27/2002	James J. Jakubowski	43231C	3329

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THE DOW CHEMICAL COMPANY
INTELLECTUAL PROPERTY SECTION
P. O. BOX 1967
MIDLAND, MI 48641-1967

EXAMINER

NILAND, PATRICK DENNIS

ART UNIT PAPER NUMBER

1714

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,913

Applicant(s)

JAKUBOWSKI ET AL.

Examiner

Patrick D. Niland

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7, 9, 13, 15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7, 9, 13, and 15-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The amendment of 5/26/05 has been entered. Claims 7, 9, 13, and 15-16 are pending.

2. Claims 7, 9, 13, and 15-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

A. There is not basis, in the originally filed specification, for the newly recited 'non-self emulsifying prepolymer' regarding the polyurethane of the instant claims 15-16. This negative limitation, which effectively excludes self emulsifying prepolymers, is not supported per Ex parte Graselli, 231 USPQ 393-395. It is noted further that the described invention encompasses the use of polyether based polyurethane prepolymers which would in fact be self emulsifiable further showing that the instant invention did not intend to exclude self emulsifiable polyurethanes. This rejection is maintained because the applicant's arguments are not persuasive. Particularly, 'non-self emulsifying prepolymer' is not some individual species which is clearly contemplated and described by the mere recitation of some of the self emulsifiable prepolymers as the applicant implies. Note that there are other self emulsifiable prepolymers such as low molecular weight polyisocyanates which do not contain ionic or non-ionic stabilizing segments but are not hydrophobic enough to separate out of water at some concentration like heptane is somewhat miscible with water. 'Non-self emulsifiable prepolymers' are a range of prepolymers having a particular range of HLBs and are a particular set of 'monomer' combinations and sequences which are not described fully nor partly by the mention of self emulsifying

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prepolymers. Thus, in reality, the newly recited language is a group of prepolymers which are not described by the instant specification nor contemplated by the instant specification. It is a negative limitation in a sense in that it eliminates the self emulsifiable polyurethanes from the previous claim scope. It thereby sets a new, non-described set of endpoints, such as but not limited to HLBs, monomer combinations, monomer concentrations, etc., which are not described in the originally filed specification. Thus, the above argued language is new matter in at least the sense established in *Grasselli*. In another sense, the new limitation implies endpoints (e.g. HLBs, monomer concentrations, monomer combinations) which are not described by the specification and which therefore violate the decision *In re Wertheim* relating to whether or not specified endpoints are new matter in range within a range situations. For these reasons, this rejection is maintained and the applicant's arguments re *Grasselli* are not persuasive. It is irrelevant to the entire scope of this rejection, however the applicant's argument that polyether containing urethanes are not self dispersible is not fully correct. Certainly some are (e.g. large amount of polyethylene oxide segments) and some are not (e.g. polytetramethylene oxide segments) self emulsifiable.

B. There is not basis in the originally filed specification for "solely" of the instant claims 7, 9, and 13. Analogous rationale as used in paragraph A above applies because the instant specification does not adequately describe all of the compositions in which the latex is solely stabilized by the claimed surfactant. This creates a situation in which the negative limitations applied by "solely", e.g. the exclusion of other stabilization methods, creates a subset of compositions not described in the specification specifically and having endpoints not established

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in the originally filed specification in violation of the theories of Ex parte Grasselli and In re Wertheim.

3. Claims 7, 9, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. It is unclear what is required by "solely". It is unclear how this affects the scope of the instant claims. It is the examiner's understanding that stabilization is an interaction of all of the components of the composition, not "solely" one of them. It is unclear if this limits the claims by excluding anything. Specifically, it is not seen where the instant specification specifies what is excluded by "solely". It is not seen that any stabilizing groups are excluded from the broadly recited polyurethanes of these claims. The claims must be interpreted in their broadest reasonable sense. This is axiomatic. The claims recite "polyurethane" which includes all polyurethanes. The specification teaches that polyurethanes containing salt groups and nonionically stabilizing groups are encompassed in their polyurethanes at page 8 of the specification, as argued regarding the new matter rejection above. Thus, it would appear that the applicant intends these polyurethanes to be encompassed in the broad recitation of polyurethanes of the subject claims. Presence of organic solvents appears to be allowed, which will contribute to the stabilization of the system. It is unclear if all urethanes are encompassed but additives that "stabilize" the composition are excluded, if self stabilized urethanes are intended to be excluded, or if "solely" is intended to mean something else as it is not defined in the instant specification what this new limitation means.

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7, 9, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat. No. 4092286 Noll et al..

Noll discloses the instantly claimed composition at the abstract; column 2, lines 46-68; column 4, lines 52-58; column 7, lines 65-68; column 8, lines 41-68; column 9, lines 1-15, of which the amine/water mixture of the paragraph bridging columns 8-9 will necessarily give some reaction of water with the NCO prepolymer, which falls within the scope of the instantly claimed chain extension with water, column 11, lines 8-46; and column 13, lines 25-27 and 49-50 for the instantly claimed solids content. The choice of anionic emulsifiers from the ionic emulsifiers of column 11, lines 43-45 is not so great as to remove Noll as an anticipating reference as they are the most commonly used emulsifiers from a group of anionic, cationic, and rarely used zwitterionic emulsifiers. See *In re Arkley*, 455 F 2d 586, 172 USPQ 524 (CCPA 1972) and *In re*

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Petering, 301 F 2d 676, 133 USPQ 275 (CCPA 1962). The lower weight fraction (note the definition of average molecular weight in polymer chemistry) of the polyurethane of the patentee falls within the scope of the instantly claimed "alkali metal soap of a modified resin".

The instant claims do not recite any limitations regarding the claimed polyurethane so as to exclude it from having any moieties therein including moieties which will make it self emulsifying. "Consisting" with regard to external anionic surfactants does not change the fact that the instantly claimed language does not recite any limitations regarding the claimed polyurethane so as to exclude it from having any moieties therein including moieties which will make it self emulsifying, particularly as the preamble of the claim recites "comprising" and the patentee encompasses the use of only anionic surfactants as the external surfactant.

The hydrophilic stabilizing groups within the polyurethanes of Noll are not excluded by the instant claims which do not recite much about the polyurethane per se. Noll clearly discloses the use of the instantly claimed anionic emulsifiers, as stated above. The language of Noll relating to the necessity of these emulsifiers does nothing to contradict the positive disclosure that they may be used in the composition of Noll, which is sufficient to anticipate the instant claim language. Reference to the particle size at low levels of internal hydrophilic groups is not material in view of the fact that this argument of the applicant ignores the fact that Noll encompasses larger amounts of these ionic groups with external surfactant, which will be understood to the ordinary skilled artisan as giving lower particle sizes, e.g. that of example 1 is 0.2 micrometers, well within the instant claims. See the other examples and the above cited section of column 11. This argument fails since it is not commensurate in scope with the overall teachings of Noll. Applicant's argument that the instant claim language excludes "internal

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surfactant' is not persuasive as no such language appears in the claims in any manner and the claims encompass all polyurethane molecules which can give the other required features. While the lists of components that one may choose from, i.e. the claimed Markusch groups contain the closed language of "consisting" as required of such lists, the overall composition contains no such closed language and any additional components may be in the claimed compositions due to the overall open nature of the claims, i.e. the first occurrence of "comprising". Interpreting the claims in their broadest reasonable sense, the instant claims recite all polyurethanes and thus include those containing emulsifiable groups of the prior art, as evident from page 8 of the applicant's specification, for the reasons stated in the second paragraph rejection relating to "solely" above. It is not reasonable to think that the emulsifier "solely" gives the claimed stabilization for the reasons stated in the second paragraph rejection relating to "solely" above. Thus, this is a reasonable interpretation of the instant, vague claims. This rejection is therefore maintained.

7. Claims 7, 9, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. No. 4092286 Noll et al. in view of US Pat. No. 4507426 Blake (applicant's assumptions regarding Blake as referencing the Blake patent of the Notice of References Cited is correct).

Noll discloses the instantly claimed composition at the abstract; column 2, lines 46-68; column 4, lines 52-58; column 7, lines 65-68; column 8, lines 41-68; column 9, lines 1-15, of which the amine/water mixture of the paragraph bridging columns 8-9 will necessarily give some reaction of water with the NCO prepolymer, which falls within the scope of the instantly claimed chain extension with water, column 11, lines 8-46; and column 13, lines 25-27 and 49-50 for the instantly claimed solids content. The choice of anionic emulsifiers from the ionic emulsifiers of column 11, lines 43-45 is not so great as to remove Noll as an anticipating reference as they are

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the most commonly used emulsifiers from a group of anionic, cationic, and rarely used zwitterionic emulsifiers. See *In re Arkley*, 455 F.2d 586, 172 USPQ 524 (CCPA 1972) and *In re Petering*, 301 F.2d 676, 133 USPQ 275 (CCPA 1962). The lower weight fraction (note the definition of average molecular weight in polymer chemistry) of the polyurethane of the patentee falls within the scope of the instantly claimed "alkali metal soap of a modified resin".

The instant claims do not recite any limitations regarding the claimed polyurethane so as to exclude it from having any moieties therein including moieties which will make it self emulsifying. "Consisting" with regard to external anionic surfactants does not change the fact that the instantly claimed language does not recite any limitations regarding the claimed polyurethane so as to exclude it from having any moieties therein including moieties which will make it self emulsifying, particularly as the preamble of the claim recites "comprising" and the patentee encompasses the use of only anionic surfactants as the external surfactant.

The hydrophilic stabilizing groups within the polyurethanes of Noll are not excluded by the instant claims which do not recite much about the polyurethane per se. Noll clearly discloses the use of the instantly claimed anionic emulsifiers, as stated above. The language of Noll relating to the necessity of these emulsifiers does nothing to contradict the positive disclosure that they may be used in the composition of Noll, which is sufficient to anticipate the instant claim language. Reference to the particle size at low levels of internal hydrophilic groups is not material in view of the fact that this argument of the applicant ignores the fact that Noll encompasses larger amounts of these ionic groups with external surfactant, which will be understood to the ordinary skilled artisan as giving lower particle sizes, e.g. that of example 1 is 0.2 micrometers, well within the instant claims. See the other examples and the above cited

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section of column 11. This argument fails since it is not commensurate in scope with the overall teachings of Noll. Applicant's argument that the instant claim language excludes 'internal surfactant' is not persuasive as no such language appears in the claims in any manner and the claims encompass all polyurethane molecules which can give the other required features. While the lists of components that one may choose from, i.e. the claimed Markusch groups contain the closed language of 'consisting' as required of such lists, the overall composition contains no such closed language and any additional components may be in the claimed compositions due to the overall open nature of the claims, i.e. the first occurrence of 'comprising'. This rejection is therefore maintained.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the dispersion forming ingredients and amounts of Noll which fall within the scope of the instant claims and which have the instantly claimed parameters because they are encompassed by Noll and would have been expected to give the dispersion properties described by Noll. It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the instantly claimed emulsifiers because they are shown by Blake to be useful in polyurethane emulsions (abstract and column 7, lines 21-31) and these fall within the scope of ionic emulsifiers of Noll.

This rejection is therefore maintained as well as for those reasons stated in paragraph 6 above.

8. Claims 7, 13, and 15-16 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat. No. 5900457 Duan et al..

Duan discloses the instantly claimed compositions at column 2, lines 28-62; column 3, lines 13-67, particularly 56-67; column 4, lines 1-67, particularly lines 1, which shows self

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emulsifying moieties to not be required, 19-20, and 43-49; column 5, lines 1-67, particularly 1, 6, 22-26, and 52-67, of which "about 45% by weight" falls within the scope of the instantly claimed solids content; and the remainder of the document.

9. Claims 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat. No. 5900457 Duan et al..

The new matter portion of the instant claims 15-16 is not entitled to the priority date of the instant application. Therefore, this rejection is proper under 102(b).

Duan discloses the instantly claimed compositions at column 2, lines 28-62; column 3, lines 13-67, particularly 56-67; column 4, lines 1-67, particularly lines 1, which shows self emulsifying moieties to not be required, 19-20, and 43-49; column 5, lines 1-67, particularly 1, 6, 22-26, and 52-67, of which "about 45% by weight" falls within the scope of the instantly claimed solids content; and the remainder of the document. Interpreting the claims in their broadest reasonable sense, the instant claims recite all polyurethanes and thus include those containing emulsifiable groups of the prior art, as evident from page 8 of the applicant's specification, for the reasons stated in the second paragraph rejection relating to "solely" above. It is not reasonable to think that the emulsifier "solely" gives the claimed stabilization for the reasons stated in the second paragraph rejection relating to "solely" above. Thus, this is a reasonable interpretation of the instant, vague claims. This rejection is therefore maintained.

10. Claims 7, 13, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. No. 5900457 Duan et al..

Duan discloses the instantly claimed compositions at column 2, lines 28-62; column 3, lines 13-67, particularly 56-67; column 4, lines 1-67, particularly lines 1, which shows self

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emulsifying moieties to not be required, 19-20, and 43-49; column 5, lines 1-67, particularly 1, 6, 22-26, and 52-67, of which "about 45% by weight" falls within the scope of the instantly claimed solids content; and the remainder of the document. It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the instantly claimed combinations of ingredients and other composition parameters in the composition of the patentee because they are encompassed by the patentee, as stated above, and would have been expected to give the dispersion properties of the patentee. Interpreting the claims in their broadest reasonable sense, the instant claims recite all polyurethanes and thus include those containing emulsifiable groups of the prior art, as evident from page 8 of the applicant's specification, for the reasons stated in the second paragraph rejection relating to "solely" above. It is not reasonable to think that the emulsifier "solely" gives the claimed stabilization for the reasons stated in the second paragraph rejection relating to "solely" above. Thus, this is a reasonable interpretation of the instant, vague claims. This rejection is therefore maintained.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick D. Niland whose telephone number is 571-272-1121. The examiner can normally be reached on Monday to Thursday from 10 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)



Patrick D. Niland
Primary Examiner
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